AMENDMENT TO THE CLAIMS

1. (Original) An isolated protein comprising an amino acid sequence wherein said amino acid sequence is selected from the group consisting of SEQ ID NO:1, SEQ ID NO:2, SEQ ID NO:3, SEQ ID NO:4, SEQ ID NO:5, SEQ ID NO:6, SEQ ID NO:7, SEQ ID NO:8, SEQ ID NO:9, SEQ ID NO:10, and SEQ ID NO:11.

2. (Original) A pharmaceutical composition comprising the protein of claim 1.

3. (Original) A diagnostic composition for detecting pollen allergy comprising the protein of claim 1.

4. (Original) The diagnostic composition of claim 3 wherein said pollen is ragweed pollen.

5. (Original) A method of treating pollen allergy in a mammal comprising administering a pharmaceutically effective amount of the protein of claim 1 to said mammal.

6. (Original) The method of claim 5 wherein said pollen is ragweed pollen.

7. (Original) The method of claim 5 wherein said mammal is a human.

8. (Original) A method of treating sensitivity to pollen in a mammal sensitive to pollen comprising administering to said mammal a therapeutically effective amount of the protein of claim 1.

9. (Original) The method of claim 8 wherein wherein said pollen is ragweed pollen.

10. (Original) The method of claim 8 wherein said mammal is a human.

11. (Original) An isolated nucleic acid compromising a nucleotide sequence encoding an amino acid sequence wherein said amino acid sequence is selected from the group consisting of SEQ ID NO:1, SEQ ID NO:2, SEQ ID NO:3, SEQ ID NO:4, SEQ ID NO:5, SEQ ID NO:6, SEQ ID NO:7, SEQ ID NO:8, SEQ ID NO:9, SEQ ID NO:10, and SEQ ID NO:11.

12. (Original) An expression vector comprising a nucleic acid of claim 11.

13. (Original) A host cell comprising an expression vector of claim 11.

14. (Original) An isolated pollen allergen substantially free of any other pollen proteins characterized by the following physiochemical and biological properties: a) being contained in pollen extracts, b) a glycoprotein, c) a sulfhydryl group containing protein, d) a molecular weight about 30,000 as determined by SDS-polyacrylamide gel electrophoresis and e) possessing allergen activity.

15. (Original) The allergen of claim 14 wherein said pollen is ragweed pollen.

16. (Original) A pharmaceutical composition comprising the allergen of claim 14.

17. (Original) A diagnostic composition for detecting allergic diseases which comprises as the active ingredient a diagnostically effective amount of the allergen of claim 14.

18. (Original) The diagnostic composition of claim 17 wherein said allergen is ragweed pollen.

19. (Original) A method of treating pollen allergy in a mammal comprising administering a pharmaceutically effective amount of the allergen of claim 14 to said mammal.

20. (Original) The method of claim 19 wherein said mammal is a human.

21. (Original) The method of claim 19 wherein said pollen allergy is ragweed pollen allergy.

22. (Original) A therapeutic composition comprising an antigenic fragment of a ragweed pollen allergen Ambt 7 wherein said antigenic fragment comprises an amino acid sequence selected from the group consisting of SEQ ID NO:1, SEQ ID NO:2, SEQ ID NO:3, SEQ ID NO:4, SEQ ID NO:5, SEQ ID NO:6, SEQ ID NO:7, SEQ ID NO:8, SEQ ID NO:9, SEQ ID NO:10, and SEQ ID NO:11 wherein said antigenic fragment comprises at least one epitope of said pollen allergen and a pharmaceutically effective carrier.

23. (Original) The therapeutic composition of claim 22 wherein said epitope is a T cell epitope.

24. (Original) The therapeutic composition of claim 22 wherein said epitope is a B cell epitope.

25. (Original) A method of treating pollen sensitivity in a mammal comprising administering a therapeutically effective amount of the therapeutic composition of claim 22 to a mammal.

26. (Original) The method of claim 25 wherein said mammal is a human.

27. (Original) The method of claim 25 wherein said pollen sensitivity is ragweed pollen sensitivity.

28. (Original) A therapeutic composition comprising an Ambt7 pollen allergen which is a polymorphic variant of a ragweed Ambt7 pollen allergen wherein said polymorphic variant comprises an amino acid sequence selected from the group consisting of SEQ ID NO:1,

SEQ ID NO:2, SEQ ID NO:3, SEQ ID NO:4, SEQ ID NO:5, SEQ ID NO:6, SEQ ID NO:7, SEQ ID NO:8, SEQ ID NO:9, SEQ ID NO:10, and SEQ ID NO:11 and a pharmaceutically acceptable carrier.

29. (Original) A method of treating pollen sensitivity in a mammal comprising administering a therapeutically effective amount of the therapeutic composition of claim 28 to a mammal.

30. (Original) The method of claim 29 wherein said mammal is a human.

31. (Original) The method of claim 29 wherein said pollen sensitivity is ragweed pollen sensitivity.

32. (Original) A kit for detecting Ambt7 pollen allergen comprising one or more proteins wherein said one or more proteins comprises an amino acid sequence selected from the group consisting of SEQ ID NO:1, SEQ ID NO:2, SEQ ID NO:3, SEQ ID NO:4, SEQ ID NO:5, SEQ ID NO:6, SEQ ID NO:7, SEQ ID NO:8, SEQ ID NO:9, SEQ ID NO:10, and SEQ ID NO:11.

33. (Original) The kit of claim 32 further including protein detection components.

34. (Original) The kit of claim 32 wherein said protein detection components include antibodies.

35. (Original) The kit of claim 32 further including directions for use of the kit.

36. (Original) A method of purifying a pollen allergen, comprising:

a) suspending said pollen in a liquid to form a pollen solution;

b) centrifuging said pollen solution to produce a pollen protein supernatant;

c) precipitating said protein in said pollen protein supernatant to form a protein precipitate;

d) resuspending said protein precipitate in a protein precipitate buffer to form a resuspended protein mixture;

e) extracting said resuspended protein mixture in organic solvent to form an aqueous phase and an organic phase; and

f) purifying said pollen allergen from said aqueous phase.

37. (Original) The method of claim 36 wherein protein in said pollen solution is precipitated with $(NH_4)_2\ SO_4$.

38. (Original) The method of claim 36 wherein said organic solvent is petroleum ether.

39. (Original) The method of claim 36 wherein said pollen allergen is purified from said aqueous phase by chromatography or electrophoresis procedures.

40. (Original) The method of claim 39 wherein said chromatography procedure is gel filtration or affinity chromatography.

41. (Original) An isolated antibody that binds specifically to a protein comprising an amino acid sequence wherein said amino acid sequence is selected from the group consisting of SEQ ID NO:1, SEQ ID NO:2, SEQ ID NO:3, SEQ ID NO:4, SEQ ID NO:5, SEQ ID NO:6, SEQ ID NO:7, SEQ ID NO:8, SEQ ID NO:9, SEQ ID NO:10, and SEQ ID NO:11.

42. (Original) The antibody of claim 41 wherein said antibody is a polyclonal antibody.

43. (Currently Amended) The antibody of claim 41 wherein said antibody is a ~~monoclonal~~ monoclonal antibody.

44. (Original) An isolated antibody that binds specifically to a pollen allergen substantially free of any other pollen proteins wherein said pollen allergen is characterized by the following physiochemical and biological properties: a) being contained in pollen extracts, b) a glycoprotein, c) a sulfhydryl group containing protein, d) a molecular weight about 30,000 as determined by SDS-polyacrylamide gel electrophoresis and e) possessing allergen activity.

45. (Original) The antibody of claim 44 wherein said antibody is a polyclonal antibody.

46. (Currently Amended) The antibody of claim 44 wherein said antibody is a ~~monoclonal~~ monoclonal antibody.